

Positioners & Actuators for any type or size of combustion engine

POSITIONERS & ACTUATORS

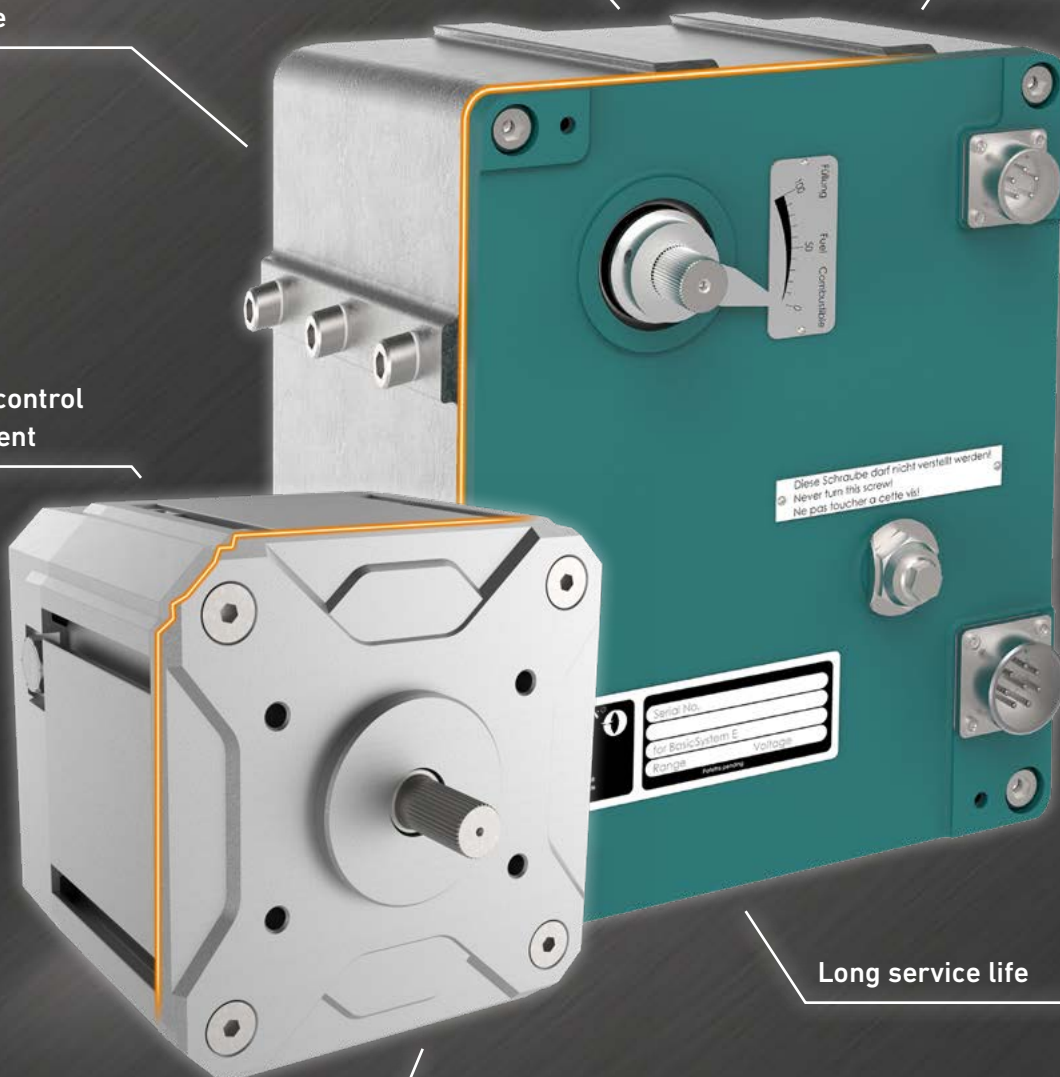
Dynamic power delivery

Easily fitted to
any engine

Proven in countless
installations

Reliable and robust

Excellent control
management



Compact design

Long service life



HEINZMANN POSITIONERS & ACTUATORS

For any size or type of combustion engine

Based on HEINZMANN's more than 125 years' experience in developing and producing high-performance actuators, their proven reliability and long service life is well known in the market.

We have a large range of actuator models covering practically any application and sector. This means that customers can find a product tailored to their exact requirements.

Alongside the wide range of HEINZMANN control units we offer complete series of control systems covering a broad spectrum of applications. HEINZMANN actuators are an important part of our wide range of subsystems with excellent functional and reliability properties for an optimised air path design. Thus HEINZMANN systems provide complete solutions to match all customer needs.

ELECTRIC POSITIONERS & ACTUATORS

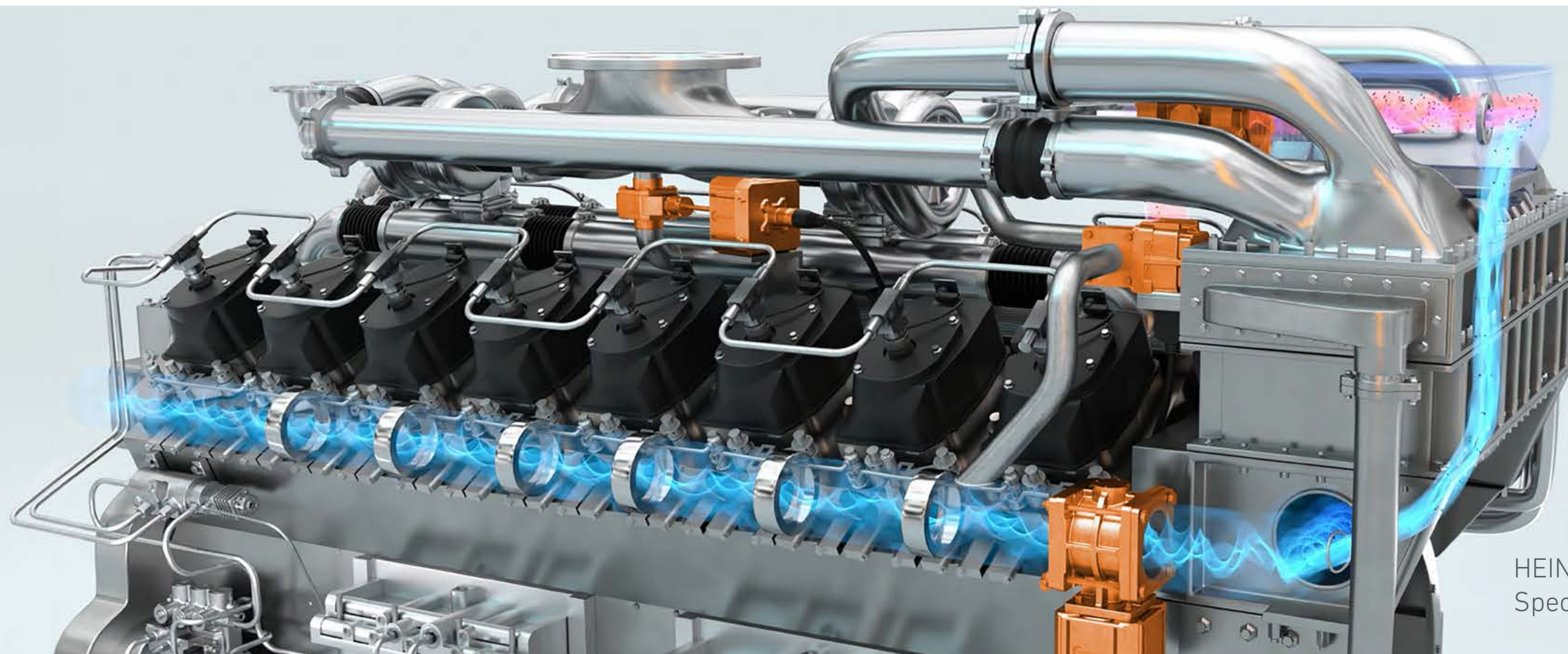
- ▶ EC Positioners with brushless permanent magnet synchronous motor
- ▶ Positioners with brushed disc-type motor
- ▶ Actuators
- ▶ Accessories

APPLICATIONS

- ▶ Gas Engines
- ▶ Diesel Engines
- ▶ Turbines

USED FOR

- ▶ Ships
- ▶ Gensets
- ▶ Industrial Vehicles
- ▶ Locomotives
- ▶ CHP



HEINZMANN –
Specialist for optimised air path management

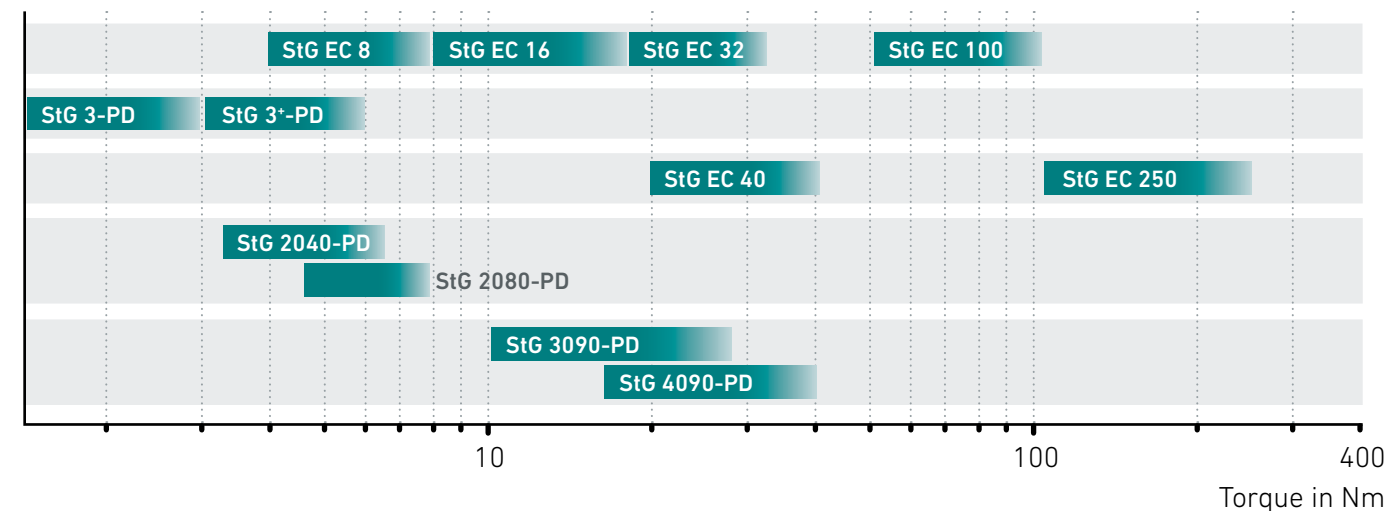
POSITIONERS

HEINZMANN offers actuators with integrated positioning electronics as well as positioning modules.

On the basis of the proven HEINZMANN actuators HEINZMANN produces positioners with very high performance combined with fast response, independent of the direction of rotation or shaft position.

Ideally suited for operating control linkages and butterfly valves (throttle valves, wastegates, ...) of internal combustion engines.

TORQUE RANGE



EC POSITIONERS

With brushless permanent magnet synchronous motor

This model series from HEINZMANN is based on many years of experience in the construction of electric synchronous motors, which are used here as actuators and are additionally equipped with integrated positioning electronics.

The nominal torque range extends from 4 Nm to 250 Nm at actuating angles from 68° to 90°, in special cases, even larger angles are possible. These models are mainly used in medium/large gas engines or dual-fuel engines. The devices can be controlled by any electronic speed governor and various input signal types are possible.

► High-performance

► Robust

► Fast response

StG EC 8 / StG EC 16 / StG EC 32 / StG EC 100

This series of actuators represents HEINZMANN's new generation of redesigned positioners.

Their brushless electric drive system directly works on the shaft and already delivers considerable torque. StG EC 100 is additionally equipped with a planetary gearbox to achieve even higher torques up to 100 Nm. StG EC series offers high performance combined with rapid response, irrespective of direction of rotation or shaft position. Thanks to the robust design, there are virtually no limits to the areas of application, such as industrial or marine purposes.

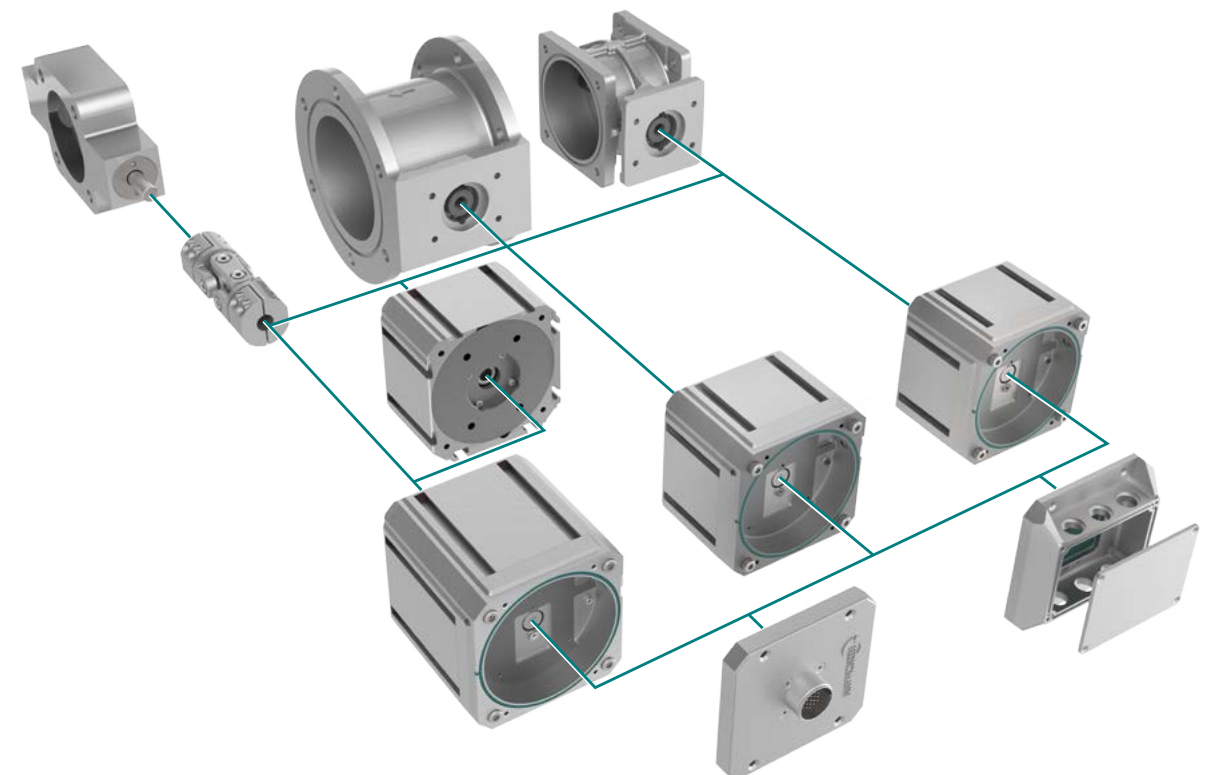


TECHNICAL DATA

- Torque: max. 8 Nm (StG EC 8)
16 Nm (StG EC 16)
32 Nm (StG EC 32)
100 Nm (StG EC 100)
- Rotation: 90° (up to 320° optional)
- Response time: <55 ms / <65 ms / <250 ms
- Direct acting
- Available with throttle valve, Ø 48 ... 180 mm

Modular Concept

The new modular concept allows for a high degree of flexibility when combining a wide variety of actuator components. These can be, for example, throttle valves, control linkages or gearboxes of various designs. In addition, the electrical interface can easily be customised to meet specific customer requirements.



StG 3-PD / StG 3⁺-PD

These two positioners are the consequent derivative of the actuators StG 3 with all of their benefits and can be used with internal combustion engines of all types with low and medium power. Two different versions are available, StG 3-PD or StG 3⁺-PD with stronger maximum torque. Rugged and resistant design and protection class IP6K9K allow use even under harshest environmental conditions.



TECHNICAL DATA

- Torque: max. 3 Nm (StG 3-PD)
6 Nm (StG 3⁺-PD)
- Rotation: 72°
- Response time: <40 ms
- Direct acting
- Available with integrated throttle valve, Ø 48 ... 110 mm

StG EC 40 / StG EC 250

High-performance positioner with integrated gearbox. It disposes of fast response, regardless of sense of rotation or shaft position. Features are completely galvanically insulated customer interfaces, redundant power supply and contactless position feedback. Any mounting position is possible. Functional ranges are provided for marine applications and industrial purposes.



TECHNICAL DATA

- Torque: max. 40 Nm
- Rotation: 82°
- Response time: <355 ms



TECHNICAL DATA

- Torque: max. 250 Nm
- Rotation: 82°
- Response time: <400 ms

StG 2040-PD / StG 2080-PD

The HEINZMANN positioners StG 2040-PD and StG 2080-PD are compactly designed for flexible mounting positions, which predestines it for a wide range of applications. Excellent dynamic characteristics and precise positioning in both working directions make this system best for powerful combustion engines, for example gas engine applications.



TECHNICAL DATA

- Torque: max. 6.6 / 7.8 Nm
- Rotation: 68°
- Response time: <150 / <90 ms
- Direct acting
- Available with throttle valve, Ø 68 ... 110 mm

POSITIONERS

With brushed disc-type motor

This HEINZMANN range is based on the standard versions of our actuators and is equipped with integrated positioning electronics. The nominal torque range is from 4 Nm to 44 Nm at a rotary angle of 68° or 90°. These models are mainly used in medium/large gas engines and dual-fuel engines. These devices can be actuated by any electronic speed governor that can process an analogue position setpoint signal.

- ▶ Integrated electronic
- ▶ Robust
- ▶ Proven in countless installations

StG 30.90-PD / StG 40.90-PD

The StG 30.90-PD / 40.90-PD is an actuator with integrated positioning electronics. It features a DC disc-type motor with two-stage transmission. The parameters can be set using a powerful software package. 30.90-PD / 40.90-PD is ideal for use in high-performance engines.



TECHNICAL DATA

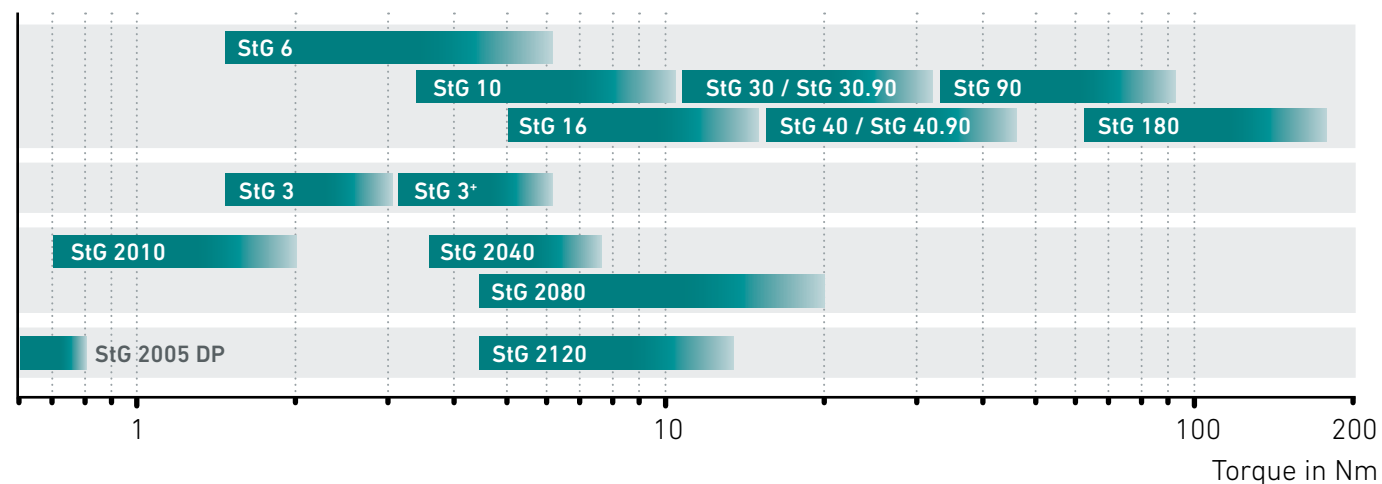
- Torque: max. 31.5 / 40 Nm
- Rotation: 90°
- Response time: <240 / <280 ms
- With transmission

ACTUATORS

For more than 125 years, HEINZMANN has been developing and producing extremely efficient actuators with different torque levels and modes of operation, covering all areas of application.

Our renowned electrical actuators can easily be installed on any type of engine and are suitable for use as original equipment or for retrofits.

TORQUE RANGE



ACTUATORS

Motor driven with transmission

HEINZMANN's electrical motor driven actuators combine a DC disc-type motor with a transmission. As a result these actuators provide torque outputs up to 180 Nm. Starting with 36° the range of control angle can reach up to 90°.

They are used in medium-sized and large diesel or gas engines, as well as gas and steam turbines. The actuators work excellently together with HEINZMANN digital governors. For application with other controls their contactless feedback system provides a precise position signal.



- ▶ Long service life
- ▶ Reliable
- ▶ Proven in countless installations

StG 6 / StG 10

These actuators are mainly used in industrial engines and controlled by HEINZMANN digital governors. Diesel engines up to 1000 kW power as well as gas engines or turbines are the preferential application for this family of actuators.



TECHNICAL DATA

- Torque: max. 6 / 10 Nm
- Rotation: 36°
- Response time: 75 / 60 ms
- Feedback: analogue

StG 16 / StG 30 / StG 40

These actuators are combined with HEINZMANN digital governors. They are mainly used in internal combustion engines, such as diesel engines up to 4000 kW power as well as gas engines or turbines.



TECHNICAL DATA

- Torque: max. 15 / 31,5 / 44 Nm
- Rotation: 42°
- Response time: 120 / 190 / 190 ms
- Feedback: analogue

StG 30.90 / StG 40.90

StG 30.90 and StG 40.90 are robust and durable actuators with rotation angle up to 90°. Equipped with a DC disc-type motor. Combined with an internal two-stage transmission they provide considerable torque. Diesel engines up to 4000 kW power as well as gas engines or turbines are the preferential application for this family of actuators.



TECHNICAL DATA

- Torque: max. 31.5 / 44 Nm
- Rotation: 90°
- Response time: 235 / 275 ms
- Feedback: analogue

StG 90

This powerful actuator has proven their worth in industrial engines and turbines and works together with HEINZMANN digital governors. Medium-sized and large diesel engines as well as gas engines or turbines are the preferential application for this type of powerful actuator.



TECHNICAL DATA

- Torque: max. 90 Nm
- Rotation: 42°
- Response time: 320 ms
- Feedback: analogue

StG 180

This extremely powerful actuator with a strong actuating torque up to 180 Nm is ideal for both large industrial diesel or gas engines and for turbines and is driven by digital HEINZMANN governors. Working in both directions it offers quick response time, return spring, low current consumption on change of load and extremely low retaining current.



TECHNICAL DATA

- Torque: max. 180 Nm
- Rotation: 42°
- Response time: 320 ms
- Feedback: analogue

ACTUATORS

Direct acting

This is a range of direct-acting actuators with rotating shaft and all-electric drive concept. The torque varies from 0.55 to 13 Nm at a maximum control angle of 36°, 53°, 68° or 70°. They are primarily used for diesel and gas engines with outputs from 100 to 1000 kW in vehicles and in industry and can be combined with various analogue and digital HEINZMANN governors.



► Compact design

► Dynamic torque delivery

► Contactless position feedback

StG 3 / StG 3+

These powerful and robust actuators are mainly used in small and medium-sized diesel and gas engines or turbines and are suitable for harshest ambient conditions. Two different versions are available, StG 3 for higher ambient temperature up to 150°C or StG 3+ with stronger maximum torque.

In addition, these actuators are also available as complete units with integrated throttle valves of various diameters that makes them an ideal component for air-path management of combustion engines.



TECHNICAL DATA

- Torque: max. 3 Nm (StG 3)
6 Nm (StG 3+)
- Rotation: 72°
- Response time: <40 ms
- Feedback: analogue
- Available with integrated throttle valve,
Ø 48 ... 110 mm

StG 2010 / StG 2040 / StG 2080

These models are the most powerful versions in the 2000 actuator range, and can excellently be controlled by HEINZMANN digital governors and by positioning modules. They are used in diesel, gas and dual-fuel engines and can be combined directly with various throttle valves for hot and cold applications. The brushless permanent magnet system makes this actuator series ideal for use with gas engines.



TECHNICAL DATA

- Torque: max. 1.4 ... 11 Nm
- Rotation: 36° or 68°
- Response time: 45 ... 85 ms
- Feedback: analogue
- Available with throttle valve,
Ø 68 ... 110 mm

StG 2005 DP

The DP versions of our actuators have been designed for direct installation on conventional diesel injection pumps and are driven by HEINZMANN digital governors. They are mainly used in industrial engines producing 100 to 1000 kW. They are primarily used to replace mechanical governors in diesel and dual-fuel engines, allowing them to benefit from the additional functions provided by electronic governors.



TECHNICAL DATA

- Torque: max. 0.8 / 5.6 Nm
- Rotation: 32° or 36°
- Response time: 50 ms
- Feedback: digital

StG 2120

The StG 2120 is tailored to engine and turbine applications and their specific ambient conditions and is controlled by HEINZMANN digital governors or HEINZMANN positioning modules. Its higher explosion protection class makes it ideal for use in gas turbines and gas engines that are subject to more stringent requirements.



TECHNICAL DATA

- Torque: max. 13 Nm
- Rotation: 68°
- Response time: <100 ms
- Feedback: analogue

ACTUATORS

Direct acting with linear output

These direct-acting linear actuators have been developed for direct installation in diesel in-line injection pumps. They come with a special very precise contactless position feedback. Main applications are small diesel and gas engines for power generation.

- Suitable for small diesel or gas engines
- Robust design
- Maintenance-free

LA 25 / LA 30 / LA 35

HEINZMANN linear actuators are available in three versions with linear output of 25, 30 or 35 N.

They are controlled by a range of HEINZMANN digital controls, e.g. the DC 7, DC 9, DC 10 or DC 12.



TECHNICAL DATA

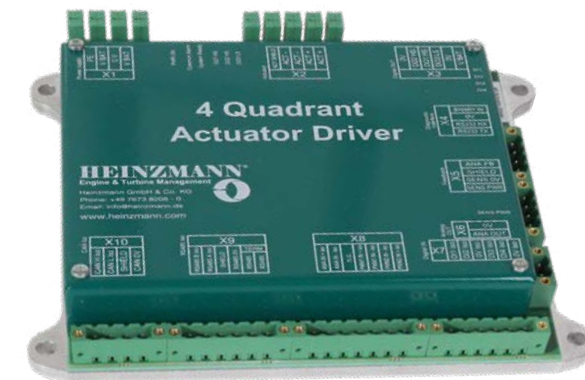
- Force: max. 25 / 30 / 35 Nm
- Stroke: 19.5 / 15.5 / 12.5 mm
- Response time: <100 ms
- Feedback: digital

ACCESSORIES

Digital positioning module for controlling HEINZMANN actuators together with external governors.

4Q-Positioner module

Digital positioner module for operating high torque actuators StG 64, StG 90, StG 180 in four quadrant operation with non-HEINZMANN controls.



NOTES

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Actuator data											Applicable control units and direction of work							
Rotary output	Actuator type	Max. rotation/ stroke	Max. torque/ force	Torque/force in steady state position	No load response time	Steady state current	Max. current	Ambient temperature	Degree of protection	Weight approx.	4Q Driver	HELENOS DC 2	PANDAROS DC 6	ORION DC 9	ORION DC 10	XIOS	Analogue feedback	Digital feedback
	StG 3	72°	3 Nm	1.5 Nm	< 40 ms	3 A	6 A	-20°C ... 150°C	IP6K9K	5.5 kg	4Q					4Q	×	
	StG 3*	72°	6 Nm	3 Nm	< 40 ms	3 A	6 A	-20°C ... 100°C	IP6K9K	5.5 kg	4Q					4Q	×	
	StG 2010	36°	2 Nm (spring)	1 Nm	45 ms	3 A	6 A	-25°C ... 90°C	IP65	2.2 kg	4Q	4Q	4Q	4Q			×	
	StG 2010	68°	1.4 Nm (spring)	0.7 Nm	60 ms	3 A	6 A	-25°C ... 90°C	IP65	2.2 kg	4Q	4Q	4Q	4Q			×	
	StG 2040	36°	7.4 Nm (spring)	3.7 Nm	50 ms	4 A	8 A	-25°C ... 90°C -40°C ... 90°C	IP65	6.5 kg	4Q	4Q	4Q	4Q		4Q	×	
	StG 2040	68°	5.6 Nm	3.4 Nm	70 ms	4 A	8 A	-25°C ... 90°C -40°C ... 90°C	IP65	6.5 kg	4Q	4Q	4Q	4Q		4Q	×	
	StG 2080	36°	11 Nm (spring)	5.5 Nm	60 ms	4 A	8 A	-25°C ... 90°C -40°C ... 90°C	IP65	8.6 kg	4Q	4Q	4Q	4Q		4Q	×	
	StG 2080	68°	8.4 Nm (spring)	4.2 Nm	85 ms	4 A	8 A	-25°C ... 90°C -40°C ... 90°C	IP65	8.6 kg	4Q	4Q	4Q	4Q		4Q	×	
	StG 2005 DP	32°	0.8 Nm	0.4 Nm	50 ms	3 A	6 A	-25°C ... 90°C	IP55	2.4 kg		4Q	4Q	4Q				×
	StG 2040 DP	36°	5.6 Nm	2.8 Nm	50 ms	3 A	6 A	-25°C ... 90°C -40°C ... 90°C	IP55	4.2 kg		4Q	4Q	4Q				×
	StG 2120	68°	13 Nm	4.3 Nm	<100 ms	2.3 A	7 A	-20°C ... 60°C	IP55	17.8 kg	4Q	4Q				4Q	×	
	StG 6-01	36°	4 Nm	1.4 Nm	75 ms	1.7 A	5 A	-25°C ... 90°C	IP55	3.5 kg	4Q	4Q	4Q	4Q		4Q	×	
	StG 6-02V	36°	6 Nm	2 Nm	50 ms	1.7 A	5 A	-25°C ... 90°C	IP55	3.5 kg	4Q	4Q	4Q	4Q		4Q	×	
	StG 10	36°	10 Nm	3.3 Nm	60 ms	1.7 A	5 A	-25°C ... 90°C -40°C ... 90°C	IP55	4.3 kg	4Q	4Q	4Q	4Q		4Q	×	
	StG 16	42°	15 Nm	5 Nm	120 ms	1.7 A	5 A	-25°C ... 90°C	IP55	12.3 kg	4Q	4Q	4Q	4Q		4Q	×	
	StG 30	42°	31.5 Nm	10.7 Nm	190 ms	1.7 A	5 A	-25°C ... 90°C	IP55	12.3 kg	4Q	4Q	4Q	4Q		4Q	×	
	StG 30.90	90°	31.5 Nm	10.7 Nm	235 ms	1.7 A	5 A	-25°C ... 90°C	IP55	24.5 kg	4Q	4Q	4Q	4Q		4Q	×	
	StG 40	42°	44 Nm	14.5 Nm	190 ms	2.3 A	7 A	-25°C ... 90°C	IP55	12.3 kg	4Q	4Q				4Q	×	
	StG 40.90	90°	44 Nm	14.5 Nm	275 ms	2.3 A	7 A	-25°C ... 90°C	IP55	24.5 kg	4Q	4Q				4Q	×	
StG 90	42°	90 Nm	30 Nm	320 ms	2.3 A	7A	-25°C ... 90°C	IP65	32 kg	4Q						×		
StG 180	42°	180 Nm	60 Nm	320 ms	4.4 A	13 A	-25°C ... 90°C -40°C ... 90°C	IP55	39 kg	4Q						×		
Positioners	StG 2040-PD	68°	6.6 Nm	3.3 Nm	< 150 ms	3.5 A	7 A	-25°C ... 90°C	IP65	6.5 kg	integrated position control							
	StG 2080-PD	68°	7.8 Nm	4.6 Nm	< 90 ms	3.5 A	7 A	-25°C ... 90°C	IP65	8.6 kg								
	StG 30.90-PD	90°	31.5 Nm	10.7 Nm	< 240 ms	1.7 A	5 A	-20°C ... 60°C	IP55	24.5 kg								
	StG 40.90-PD	90°	40 Nm	14.5 Nm	< 280 ms	2.3 A	6.3 A	-20°C ... 60°C	IP55	24.5 kg								
	StG 3-PD	72°	3 Nm	1.5 Nm	< 40 ms	3 A	6 A	-20°C ... 100°C	IP6K9K	5.5 kg								
	StG 3*-PD	72°	6 Nm	3 Nm	< 40 ms	3 A	6 A	-20°C ... 100°C	IP6K9K	5.5 kg								
	StG EC 40	82°	> 40 Nm	> 20 Nm	< 220 ms (40°) 355 ms (82°)	5 A		-40°C ... 80°C	IP66	19 kg								
	StG EC 250	82°	> 250 Nm	> 125 Nm	< 250 ms (40°) 400 ms (82°)	external power supply		-40°C ... 80°C	IP66	37 kg								
	StG EC 8	90° (up	8 Nm	4 Nm	< 50 ms (10 ... 90 %)	1.5 A	5.5 A	-40°C ... 105°C	IP6K9K (plug IP65)	5.8 kg								
	StG EC 16	to 320° opt.)	16 Nm	8 Nm	< 50 ms (10 ... 90 %)	2 A	7.5 A	-40°C ... 105°C		7.5 kg								
	StG EC 32		32 Nm	16 Nm	< 65 ms (10 ... 90 %)	4 A	16 A	-40°C ... 95°C		11.9 kg								
StG EC 100		100 Nm	50 Nm	< 250 ms (10 ... 90 %)	4 A	16 A	-40°C ... 95°C	15.6 kg										
Linear output	LA 25	19.5 mm	25 N	20 N	< 100 ms	2 A	2.8 A	-40°C ... 90°C	IP65	0.7 kg				2Q	2Q			×
	LA 30	15.5 mm	30 N	24 N	< 100 ms	2 A	2.8 A	-40°C ... 90°C	IP65	0.7 kg				2Q	2Q			×
	LA 35	12.5 mm	35 N	28 N	< 100 ms	2 A	2.8 A	-40°C ... 90°C	IP65	0.7 kg				2Q	2Q			×

HEINZMANN

DIGITAL CONTROL SYSTEMS

All from one source

HEINZMANN actuators are an integral part of the digital HEINZMANN control systems and are optimally matched to these system solutions.

For the wide range of actuators for every type or size of combustion engine, the optimum counterpart can be found from the wide variety of HEINZMANN Governors. We develop, produce and market all system components for digital engine controller systems such as speed governors, actuators and sensors.

Increasing requirements in terms of combustion engines' efficiency, performance and reduction of environmental influences demand continuous optimisation of all relevant engine subsystems and control strategies. Whether the set objectives are met and successfully implemented depends to a large extent on the design of the air path. HEINZMANN offers a wide range of subsystems and components with excellent functional and reliability properties in this area.

The HEINZMANN DcDesk configuration and visualisation software enables the user to configure all our digital controllers and adapt them to their engine environment. This ensures optimum adaptation to different application types.



XIOS UC 1 – Modular ECU



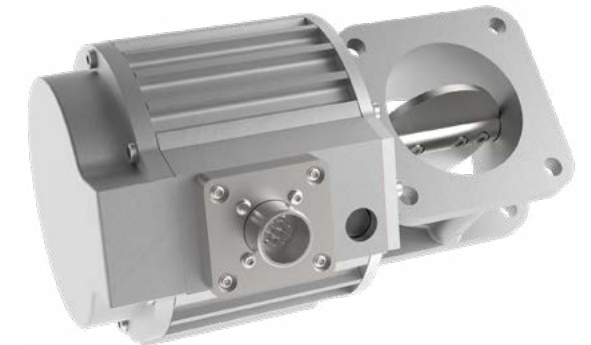
PANDAROS DC 6 – Digital Control

COMPLETE SYSTEM SOLUTIONS & OPTIMISED AIR PATH MANAGEMENT

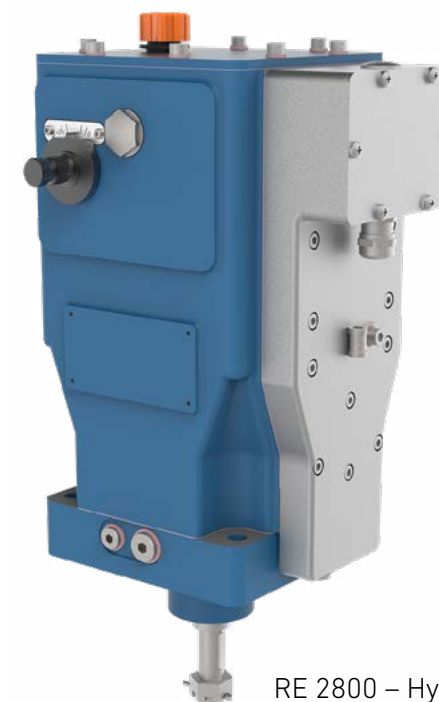
- ▶ Modular ECUs
- ▶ Digital Controls
- ▶ Actuators
- ▶ Sensors
- ▶ Configuration and visualisation software
- ▶ Wastegate valves
- ▶ Turbocharger bypass
- ▶ Exhaust gas recirculation
- ▶ Engine Monitoring



TRITON OMD – Oil Mist Detection



Turbocharger Bypass

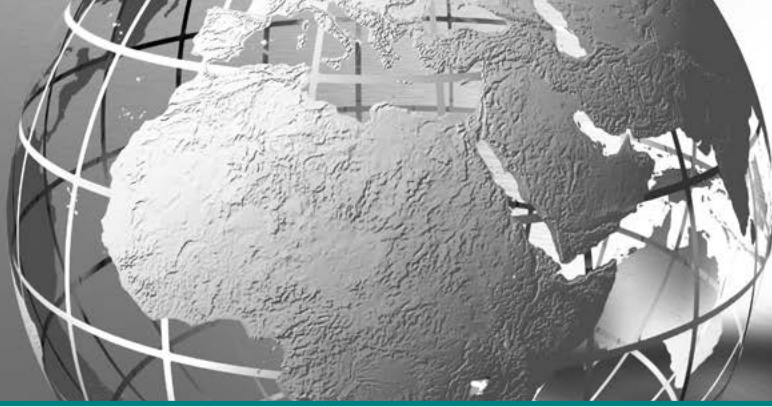


RE 2800 – Hydraulic Actuator

HYDRAULIC ACTUATORS

- ▶ With and without ballhead back-up option

For more information please refer to the REGULATEURS EUROPA product catalogue or go to www.regulateurseuropa.com.



HEINZMANN GROUP - THINKING IN DRIVE AND CONTROL

HEINZMANN is a globally active family business founded in 1897 with its headquarters in Schönaue (Germany), in the Black Forest.

Today, in the field of engine management HEINZMANN is one of the leading suppliers of components and systems for industrial combustion engines, generators and turbines. As a specialist and development partner, HEINZMANN is committed to developing exactly the right solution for increasing efficiency and reducing emissions.

In the Electric Drives division, HEINZMANN also demonstrates innovative strength and development expertise in engine technologies of the future. The company has established itself as a reliable partner and system provider for electric drive systems.

Our collaborative interaction with more than 40 globally active subsidiaries and sales companies characterises the spirit within the HEINZMANN group of companies and makes us a reliable partner.

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